



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
ENVIRONMENTAL SCIENCE CENTER
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DATE : August 26, 2003
SUBJECT: Region III Data QA Review
FROM : Fredrick Foreman
Region III ESAT RPO (3EA20)
TO : Lorie Baker
Regional Project Manager (3HS34)

Attached is the inorganic data validation report for the Elkton Farm site (Case #: 31878, SDG#: MC01P0, MC01Q7, MC01W1) completed by the Region III Environmental Services Assistance Team (ESAT) contractor under the direction of Region III EAID.

If you have any questions regarding this review, please call me at (410) 305-2629.

Attachments

cc: Chris Hartman (MDE)

TO File #: 0011

TDF#: 0823

ANALYTICAL SERVICES AND QUALITY ASSURANCE BRANCH

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DATE: August 22, 2003

SUBJECT: Inorganic Data Validation (IM2 Level)
Case: 31878
SDGs: MC01P0, MC01Q7, MC01W1
Site: Elkton Farm

FROM: Kenneth W. Curry *KWC* Inorganic Data Reviewer
Mahboobeh Mecanic *ML* Senior Oversight Chemist

TO: Fredrick Foreman
ESAT Region 3 Project Officer

OVERVIEW

Case 31878, Sample Delivery Groups (SDGs) MC01P0, MC01Q7 and MC01W1, from the Elkton Farm site consisted of thirty-eight (38) soil and fifteen (15) aqueous samples analyzed for total metals and cyanide (CN) in addition to five (5) aqueous samples analyzed for dissolved metals. All samples were analyzed by Ceimic Corporation (CEIMIC). The sample set included three (3) field blanks, one (1) filtrate field blank, two (2) aqueous field duplicate pairs and four (4) soil field duplicate pairs. The samples were analyzed according to Contract Laboratory Program (CLP) Statement of Work (SOW) ILM05.2 through the Routine Analytical Services (RAS) program.

SUMMARY

All samples were successfully analyzed for all required parameters with the exception of antimony (Sb) in SDGs MC01Q7 and MC01W1. Areas of concern with respect to data usability are listed below.

Positive results reported from unfiltered field blanks were utilized to evaluate samples for field contamination in total metals samples collected the same day of blank collection. Positive results reported from the filtered field blank were utilized to evaluate samples for field contamination in the dissolved metals samples.

Data for this case are impacted by outliers generated in laboratory and field blanks as well as matrix spike, laboratory duplicate and ICP serial dilution analyses. Details regarding these outliers are discussed under "Major and Minor Problems". Specific samples affected are outlined in "Table 1A" and qualified analytical results for all samples are summarized on Data Summary Form (DSFs).

MAJOR PROBLEM

Matrix spike recoveries were extremely low (<30%) for antimony (Sb) in SDGs MC01Q7 and MC01W1. Reported results for this analyte may be biased extremely low. The "L" qualifier for this outlier has been superseded by "J" or "B". Quantitation limits for this analyte in these SDGs were rejected and qualified "R" on the DSFs.

MINOR PROBLEMS

Continuing calibration and/or preparation blanks had negative values greater than the absolute value of the Method Detection Limits (MDLs) for analytes listed below. Reported results less than two times ($<2X$) the absolute value of the blank and quantitation limits in affected samples for these analytes may be biased low and have been qualified "L" and "UL", respectively, on the DSFs unless superseded by "J", "R" or "B".

<u>SDG</u>	<u>Analyte(s)</u>
MC01P0	potassium (K), cyanide (CN ⁻)
MC01Q7	copper (Cu), CN ⁻
MC01W1	Sb, beryllium (Be), selenium (Se), silver (Ag), thallium (Tl), CN ⁻

Continuing Calibration (CCB), Preparation (PB) and/or Field (FB) Blanks had reported results greater than MDLs for analytes listed below. Reported results in affected samples which are less than or equal to five times ($\leq 5X$) blank concentrations may be biased high and have been qualified "B" on the DSF.

<u>SDG</u>	<u>Blank</u>	<u>Affected Analytes</u>
MC01P0	CCB	Be, cobalt (Co), copper (Cu), nickel (Ni), vanadium (V)
	PB	aluminum (Al), calcium (Ca), chromium (Cr), iron (Fe), magnesium (Mg), sodium (Na)
	FB	V
MC01Q7	PB	Sb, lead (Pb), Ni, K, Na
	FB	Ca, Na
MC01W1	CCB	arsenic (As), Be, cadmium (Cd), Pb, K, Tl
	PB	Ca, Cu, Tl
	FB	Na

Positive results detected between the MDL and CRQL were qualified "J" on the DSFs unless superseded by "B".

Percent Differences (%Ds) for the ICP serial dilution analyses were outside control limits ($>10\%$) for Ni in SDG MC01Q7 and for cobalt (Co), Pb and K in SDG MC01W1. Reported results regarding these analytes are estimated and have been qualified "J" on the DSFs unless superseded by "B".

Matrix spike recoveries were low ($<75\%$) for As, Pb, Se, Tl and CN⁻ in SDG MC01Q7. Reported results and quantitation limits for these analytes in this SDG may be biased low and have been qualified "L" and "UL", respectively, on the DSFs unless superseded by "B" or "J".

Matrix spike recovery was high (>125%) for Pb in SDG MC01W1. Reported results for this analytes in this SDG may be biased high. The "K" qualifier for this outlier has been superseded by "J" or "B" on the DSFs.

The Relative Percent Difference (RPD) for the laboratory duplicate analysis was outside control limits (35% RPD) for Pb in SDG MC01W1. Reported results for this analyte in this SDG are estimated and have been qualified "J" on the DSFs unless superseded by "B".

NOTES

Reported results for aqueous field duplicate pair MC01P1/MC01P4 were within 20% RPD, \pm CRQL for all analytes except Al and Fe. Reported results for aqueous field duplicate pair MC01Q0/MC01Q2 were within 20% RPD, \pm CRQL for all analytes except Fe.

Reported results for soil field duplicate pairs were within 35% RPD, \pm 2CRQL for all analytes except barium (Ba) and zinc (Zn) in sample pair MC01T3/MC01T7 and for iron (Fe) and manganese (Mn) in sample pair MC01X8/MC01Y0.

The reported result for Fe in the preparation blank in SDG MC01W1 was greater than the CRQL. However, the laboratory was not required to re-digest and re-analyze any samples because the concentrations of Fe in each sample in this SDG was greater than ten times (>10X) the blank concentration. No action was taken by the reviewer based on this finding.

The laboratory failed to generate Form III (Blanks) for the analytical run dated 7/12/03 in SDG MC01P0. The raw data were checked by reviewer and no outliers were detected that would affect the data. No action was taken by the reviewer based on this finding.

Data for case 31878, SDGs MC01P0, MC01Q7 and MC01W1, were reviewed in accordance with National Functional Guidelines for Evaluating Inorganic Analyses with Modification for use within Region III.

ATTACHMENTS

INFORMATION REGARDING REPORT CONTENT

Table 1A is a summary of qualifiers applied to the laboratory-generated results during data validation.

TABLE 1A	SUMMARY OF QUALIFIERS ON DATA SUMMARY FORMS AFTER DATA VALIDATION
TABLE 1B	CODES USED IN COMMENTS COLUMN OF TABLE 1A
APPENDIX A	GLOSSARY OF DATA QUALIFIER CODES
APPENDIX B	DATA SUMMARY FORMS
APPENDIX C	CHAIN OF CUSTODY (COC) RECORDS
APPENDIX D	LABORATORY CASE NARRATIVES

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

CASE: 31878
SDG#: MC01P0

<u>ANALYTE</u>	<u>SAMPLES</u> <u>AFFECTED</u>	<u>POSITIVE</u> <u>VALUES</u>	<u>NON-</u> <u>DETECTED</u> <u>VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Al	MC01M1, MC01M3, MC01M4, MC01N1, MC01P0, MC01P1, MC01P2, MC01P3, MC01P4, MC01P9, MC01Q0, MC01Q2	B		High	PB (118.238 J µg/L)
Be	MC01M3, MC01N2	B		High	CCB(0.2 J µg/L)
Ca	MC01M1, MC01M8, MC01N1, MC01N8, MC01P5, MC01P6	B		High	PB (183.093 J µg/L)
Co	MC01M4, MC01P1, MC01P3, MC01P4	B		High	CCB(0.6 J µg/L)
	MC01P0	B		High	CCB(0.8 J µg/L)
Cr	All Samples Except MC01N2, MC01N3, MC01N4, MC01P5, MC01P6	B		High	PB (1.384 J µg/L)
Cu	MC01M2, MC01N1, MC01P0	B		High	CCB(1.2 J µg/L)
	MC01P1, MC01P3, MC01P4	B		High	CCB(0.9 J µg/L)
	MC01M1, MC01P9, MC01Q0, MC01Q2	B		High	CCB(1.0 J µg/L)
Fe	MC01M1, MC01M2, MC01M3, MC01M8, MC01N1, MC01P2, MC01P9, MC01Q0	B		High	PB (80.712 J µg/L)

* See explanation of Comments on Table 1B.

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

CASE: 31878

SDG#: MC01P0

<u>ANALYTE</u>	<u>SAMPLES</u> <u>AFFECTED</u>	<u>POSITIVE</u> <u>VALUES</u>	<u>NON-</u> <u>DETECTED</u> <u>VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Mg	MC01M1, MC01M8, MC01N1, MC01N8, MC01P5, MC01P6	B		High	PB (126.890 J µg/L)
Ni	MC01M4	B		High	CCB(1.2 J µg/L)
K	MC01P6		UL	Low	CBN(-66.4 J µg/L)
Na	MC01P5, MC01P6	B		High	PB (143.452 J µg/L)
V	MC01P0	B		High	CCB(2.1 J µg/L)
	MC01P1, MC01P2, MC01P3, MC01P4, MC01P9, MC01Q0, MC01Q2	B		High	CCB(1.6 J µg/L)
	MC01M8, MC01N1	B		High	CCB(1.5 J µg/L)
	MC01M1, MC01M3, MC01M4	B		High	FB (2.3 J µg/L)
CN	All Samples Except MC01M1, MC01M2, MC01M3, MC01M4, MC01M8		UL	Low	PBN(-1.701 J µg/L)

* See explanation of Comments on Table 1B.

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

CASE: 31878

SDG#: MC01Q7

<u>ANALYTE</u>	<u>SAMPLES</u> <u>AFFECTED</u>	<u>POSITIVE</u> <u>VALUES</u>	<u>NON-</u> <u>DETECTED</u> <u>VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
Sb	All Samples Except MC01Q7, MC01T4		R	Extr./ Low	MSE(13%)
	MC01Q7	B		High	PB (0.263 J mg/Kg) MSE(13%)
	MC01T4	J			>MDL<CRQL MSE(13%)
As	All Samples Except MC01Q7, MC01Q8, MC01R0, MC01R1, MC01S1	L		Low	MSL(69%)
	MC01Q7, MC01Q8, MC01R0, MC01R1, MC01S1	J			>MDL<CRQL MSL(69%)
Ca	MC01R0, MC01S1	B		High	FB (110 J µg/L)
Pb	All Samples Except MC01Q7, MC01Q8, MC01R0	L		Low	MSL(72%)
	MC01Q7, MC01R0	J			>MDL<CRQL MSL(72%)
	MC01Q8	B		High	PB (0.536 J mg/Kg) MSL(72%)
Ni	All Samples Except MC01Q8	J			ISD(11%)
	MC01Q8	B		High	PB (0.522 J mg/Kg) ISD(11%)

* See explanation of Comments on Table 1B.

**TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION**

CASE: 31878

SDG#: MC01Q7

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
K	MC01Q7, MC01R0, MC01R1	B		High	PB (11.911 J mg/Kg)
Se	All Samples		UL	Low	MSL(56%)
Na	All Samples Except MC01Q8	B		High	PB (50.872 J mg/Kg)
	MC01Q8	B		High	FB (227 J µg/L)
Tl	All Samples		UL	Low	MSL(70%)
CN	MC01Q7, MC01Q9, MC01R0, MC01R1, MC01R3		UL	Low	MSL(64%) CBN(-0.8 J µg/L)
	MC01R4, MC01R8, MC01R9, MC01S0, MC01S1, MC01S2, MC01S6, MC01S8, MC01S9, MC01T5, MC01T6		UL	Low	MSL(64%) CBN(-1.1 J µg/L)
	MC01Q8		UL	Low	MSL(64%) CBN(-2.4 J µg/L)
	MC01T3, MC01T4, MC01T7	J			>MDL<CRQL MSL(64%)

* See explanation of Comments on Table 1B.

TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION

CASE: 31878

SDG#: MC01W1

<u>ANALYTE</u>	<u>SAMPLES</u> <u>AFFECTED</u>	<u>POSITIVE</u> <u>VALUES</u>	<u>NON-</u> <u>DETECTED</u> <u>VALUES</u> R	<u>BIAS</u> Extr./ Low	<u>COMMENTS*</u>
Sb	All Samples				MSE(23%) PBN(-1.070 J mg/Kg)
As	MC01R2, MC01R5, MC01R6, MC01R7, MC01S3, MC01S5, MC01W1	B		High	CCB(4.9 J µg/L)
	MC01X7, MC01X8, MC01Y0	B		High	CCB(4.5 J µg/L)
Be	MC01X7	B		High	CCB(0.2 J µg/L)
	MC01X8	J			>MDL<CRQL CBN(-0.2 J µg/L)
Cd	MC01X8, MC01Y0	B		High	CCB(0.3 J µg/L)
Ca	MC01R5, MC01X8, MC01Y0	B		High	PB (23.791 J mg/Kg)
Co	All Samples	J			ISD(17%)
Cu	MC01R2, MC01R5, MC01X7, MC01X8, MC01Y0	B		High	PB (0.736 J mg/Kg)
Pb	All Samples Except MC01S3	J			DUP(43%) ISD(12%) MSH(220%)
	MC01S3	B		High	CCB(2.5 J µg/L) DUP(43%) ISD(12%) MSH(220%)

* See explanation of Comments on Table 1B.

**TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION**

CASE: 31878

SDG#: MC01W1

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
K	All Samples Except MC01R2, MC01R5, MC01S3, MC01X7	J			ISD(23%)
	MC01R2, MC01R5	B		High	CCB(172.2 J µg/L) ISD(23%)
	MC01S3, MC01X7	B		High	CCB(236.4 J µg/L) ISD(23%)
Se	All Samples Except MC01R2, MC01R5, MC01R6, MC01R7, MC01W1, MC01X8, MC01Y0		UL	Low	CBN(-12.6 J µg/L)
Ag	All Samples		UL	Low	PBN(-0.160 J mg/Kg)
Na	All Samples Except MC01W1	B		High	FB (261 J µg/L)
	MC01W1	B		High	FB (227 J µg/L)
Tl	MC01R2, MC01R5, MC01R7, MC01W1	B		High	PB (2.325 J mg/Kg)
	MC01S3	B		High	PB (2.325 J mg/Kg) CBN(-10.0 J µg/L)
	MC01X8	B		High	CCB(12.1 J µg/L)
	MC01X7	B		High	CCB(12.1 J µg/L) CBN(-10.0 J µg/L)

* See explanation of Comments on Table 1B.

**TABLE 1A
SUMMARY OF QUALIFIERS ON DATA SUMMARY
FORM AFTER DATA VALIDATION**

CASE: 31878

SDG#: MC01W1

<u>ANALYTE</u>	<u>SAMPLES AFFECTED</u>	<u>POSITIVE VALUES</u>	<u>NON- DETECTED VALUES</u>	<u>BIAS</u>	<u>COMMENTS*</u>
TI	MC01S4, MC01S5, MC01S7, MC01T0, MC01T1, MC01T2, MC01T8, MC01T9, MC01W0		UL	Low	CBN(-10.0 J μ g/L)
CN	All Samples		UL	Low	PBN(-0.111 J mg/Kg)

* See explanation of Comments on Table 1B.

TABLE 1B
CODES USED IN COMMENTS COLUMN

PB	=	Preparation blanks had results > MDL (results are in parenthesis). Reported results which are less than five times (<5X) the blank concentration may be biased high.
CCB	=	Continuing calibration blanks had results > MDLs (results are in parenthesis). Reported results which are less than five times (<5X) the blank concentration may be biased high.
CBN	=	Calibration blanks had negative results with absolute values greater than the Minimum Detection Limits (MDLs) (results are in parenthesis). Reported results less than two times (<2X) the absolute value of the blank and quantitation limits may be biased low.
FB	=	Field blanks had results > MDL (results are in parenthesis). Reported results which are less than five times (<5X) the blank concentration may be biased high.
PBN	=	Preparation blanks had negative results with absolute values greater than the MDLs (results are in parenthesis). Positive results less than two times (<2X) the absolute value of the blank and quantitation limits may be biased low.
MSE	=	Matrix spike recoveries were extremely low (<30%) [% recoveries are in parenthesis]. Reported results may be biased extremely low. Quantitation limits are unusable.
>MDL <CRQL	=	The reported result is greater than the MDL but less than the Contract Required Quantitation Limit (CRQL). Results are estimated.
MSL	=	Matrix spike recoveries were low (<75%) [% recoveries are in parenthesis]. Reported results and quantitation limits may be biased low.
ISD	=	Percent Differences (%Ds) for ICP serial dilution analyses exceeded control limits (10%) [% Ds are in parenthesis]. Reported results are estimated.
DUP	=	The Relative Percent Difference (RPD) for laboratory duplicate analysis was outside control limits (35% RPD) [RPD is in parenthesis]. Reported results are estimated.
MSH	=	Matrix spike recovery was high (>125%) [% recovery is in parenthesis]. Reported results may be biased high.

APPENDIX A

Glossary of Qualifier Codes

GLOSSARY OF DATA QUALIFIER CODES (INORGANIC)

CODES RELATED TO IDENTIFICATION

(confidence concerning presence or absence of analytes):

U = Not detected. The associated number indicates approximate sample concentration necessary to be detected.

(NO CODE) = Confirmed identification.

B = Not detected substantially above the level reported in laboratory or field blanks.

R = Unusable result. Analyte may or may not be present in the sample. Supporting data necessary to confirm result.

CODES RELATED TO QUANTITATION

(can be used for both positive results and sample quantitation limits):

J = Analyte Present. Reported value may not be accurate or precise.

K = Analyte present. Reported value may be biased high. Actual value is expected to be lower.

L = Analyte present. Reported value may be biased low. Actual value is expected to be higher.

[] = Analyte present. As values approach the IDL the quantitation may not be accurate.

UJ = Not detected, quantitation limit may be inaccurate or imprecise.

UL = Not detected, quantitation limit is probably higher.

OTHER CODES

Q = No analytical result.

APPENDIX B

Data Summary Forms

DATA SUMMARY FORM: INORGANIC

Page _1_ of _12_

Case #: 31878

SDG : MC01P0

Number of Soil Samples : 0

Site :

ELKTON FARM

Number of Water Samples : 20

Lab. :

CEIMIC

Sample Number :		MC01M1		MC01M2		MC01M3		MC01M4		MC01M8	
Sampling Location :		DMGWD1		DMGWU1		DMGWU2		DMGWU3		DMGWU7	
Field QC:		Filtrate of MC01N1		Filtrate of MC01N2		Filtrate of MC01N3		Filtrate of MC01N4		Filtrate of MC01N8 Field Blank	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		06/26/2003		06/26/2003		06/26/2003		06/26/2003		06/26/2003	
Time Sampled :		12:45		10:35		10:00		11:10		10:30	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	171	B			148	B	99.0	B		
ANTIMONY	60										
*ARSENIC	15										
BARIUM	200			27.7	J	180	J	93.0	J		
BERYLLIUM	5					0.33	B				
*CADMIUM	5										
CALCIUM	5000	247	B	5440		20400		19000		143	B
*CHROMIUM	10	1.2	B	2.2	B	3.3	B	1.6	B	0.98	B
COBALT	50			5.2	J	34.7	J	2.5	B		
COPPER	25	3.7	B	3.2	B	12.2	J				
IRON	100	99.0	B	66.9	B	152	B	4770		35.0	B
*LEAD	10										
MAGNESIUM	5000	90.9	B	3770	J	19900		9230		60.6	B
MANGANESE	15	11.9	J	128		286		307			
MERCURY	0.2										
*NICKEL	40			27.8	J	37.2	J	5.9	B		
POTASSIUM	5000	461	J	384	J	4160	J	1100	J		
SELENIUM	35										
SILVER	10										
SODIUM	5000	45800		5810		127000		5340			
THALLIUM	25										
VANADIUM	50	2.2	B			2.7	B	2.5	B	2.3	B
ZINC	60										

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG : MC01P0

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :		MC01N1		MC01N2		MC01N3		MC01N4		MC01N8	
Sampling Location :		GWD1		GWU1		GWU2		GWU3		GWU7	
Field QC:										Field Blank	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		06/26/2003		06/26/2003		06/26/2003		06/26/2003		06/26/2003	
Time Sampled :		12:45		10:35		10:00		11:10		10:30	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	199	B	4670		8910		21600			
ANTIMONY	60										
*ARSENIC	15										
BARIUM	200			49.0	J	205		216			
BERYLLIUM	5			0.78	B	1.9	J	7.2			
*CADMIUM	5			0.47	J	0.99	J	2.1	J		
CALCIUM	5000	230	B	6580		22800		29200		109	B
*CHROMIUM	10	1.1	B	76.6		309		256		0.85	B
COBALT	50			10.2	J	96.3		47.7	J		
COPPER	25	4.2	B	17.1	J	115		11.2	J		
IRON	100	139	B	19200		20500		62900			
*LEAD	10										
MAGNESIUM	5000	58.9	B	5250		31500		20800		16.7	B
MANGANESE	15	12.5	J	197		541		878			
MERCURY	0.2					0.062	J	0.090	J		
*NICKEL	40			77.2		271		163			
POTASSIUM	5000	478	J	514	J	3560	J	1700	J		
SELENIUM	35					20.4	J				
SILVER	10										
SODIUM	5000	47400		6070		121000		5370			
THALLIUM	25										
VANADIUM	50	2.4	B	21.2	J	36.5	J	67.8			
ZINC	60	27.6	J	27.5	J	83.5		185			
*CYANIDE	10		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 3 of 12

Case #: 31878

SDG : MC01P0

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :		MC01P0 SWT1		MC01P1 SWT2		MC01P2 SWT3		MC01P3 SWT4		MC01P4 SWT5	
Sampling Location :				Field Dup. of MC01P4						Field Dup. of MC01P1	
Field QC:											
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		06/24/2003		06/24/2003		06/24/2003		06/24/2003		06/24/2003	
Time Sampled :		11:10		10:15		13:10		09:40		10:15	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200	168	B	476	B	126	B	231	B	128	B
ANTIMONY	60										
*ARSENIC	15										
BARIUM	200	41.2	J	38.1	J	30.3	J	37.9	J	39.1	J
BERYLLIUM	5	0.35	J								
*CADMIUM	5										
CALCIUM	5000	6700		6060		11800		8200		6250	
*CHROMIUM	10	1.5	B	1.7	B	0.91	B	0.81	B	0.76	B
COBALT	50	1.5	B	1.2	B			1.2	B	1.1	B
COPPER	25	3.3	B	3.3	B	4.7	J	3.2	B	4.5	B
IRON	100	466		770		336	B	474		428	
LEAD	10										
MAGNESIUM	5000	3540	J	3180	J	8070		4980	J	3330	J
MANGANESE	15	63.8		55.4		34.3		82.8		54.6	
MERCURY	0.2										
*NICKEL	40	4.5	J	4.0	J	5.0	J	4.9	J	4.1	J
POTASSIUM	5000	1150	J	1130	J	2310	J	1590	J	1120	J
SELENIUM	35										
SILVER	10	0.60	J								
SODIUM	5000	14800		12700		10300		11800		13200	
THALLIUM	25										
VANADIUM	50	2.2	B	2.5	B	2.6	B	2.1	B	2.2	B
ZINC	60										
*CYANIDE	10		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

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DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG : MC01P0

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :		MC01P5		MC01P6		MC01P9		MC01Q0		MC01Q2	
Sampling Location :		SWT6		SWT7		SWU1		SWU2		SWU4	
Field QC:		Field Blank		Field Blank				Field Dup. of MC01Q2		Field Dup. of MC01Q0	
Matrix :		Water		Water		Water		Water		Water	
Units :		ug/L		ug/L		ug/L		ug/L		ug/L	
Date Sampled :		06/24/2003		06/25/2003		06/25/2003		06/25/2003		06/25/2003	
Time Sampled :		09:30		09:00		11:20		10:45		10:50	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	200					291	B	156	B	156	B
ANTIMONY	60										
*ARSENIC	15										
BARIUM	200					35.3	J	33.7	J	33.7	J
BERYLLIUM	5										
*CADMIUM	5										
CALCIUM	5000	110	B	106	B	12800		12400		12100	
*CHROMIUM	10					1.8	B	0.98	B	1.8	B
COBALT	50										
COPPER	25					4.9	B	4.7	B	4.5	B
IRON	100					365	B	318	B	475	
*LEAD	10										
MAGNESIUM	5000	27.7	B	24.8	B	8570		8410		8120	
MANGANESE	15					31.5		32.6		34.4	
MERCURY	0.2										
*NICKEL	40					5.4	J	5.6	J	4.5	J
POTASSIUM	5000				UL	3000	J	2650	J	2610	J
SELENIUM	35										
SILVER	10										
SODIUM	5000	227	B	261	B	11400		11000		10800	
THALLIUM	25										
VANADIUM	50					2.5	B	2.1	B	3.1	B
ZINC	60										
*CYANIDE	10		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

*Action Level Exists

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG: MC01Q7

Number of Soil Samples: 20

Site:

ELKTON FARM

Number of Water Samples: 0

Lab.:

CEIMIC

Sample Number :		MC01Q7		MC01Q8		MC01Q9		MC01R0		MC01R1	
Sampling Location :		SED1		SED2		SED3		SED4		SED5	
Field QC:				Field Dup. of MC01R1						Field Dup. of MC01Q8	
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		06/24/2003		06/24/2003		06/24/2003		06/24/2003		06/24/2003	
Time Sampled :		11:10		10:15		13:15		09:40		10:15	
%Solids :		78.2		77.9		63.2		77.7		76.3	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	768		796		8420		581		668	
ANTIMONY	12	0.23	B		R		R		R		R
ARSENIC	3	1.0	J	0.98	J	4.2	L	0.62	J	0.81	J
BARIUM	40	4.3	J	6.7	J	67.8		4.1	J	4.7	J
BERYLLIUM	1	0.11	J	0.21	J	0.79	J	0.13	J	0.21	J
CADMIUM	1	0.082	J	0.17	J	0.52	J	0.31	J	0.15	J
CALCIUM	1000	155	J	328	J	604	J	107	B	163	J
CHROMIUM	2	2.9		3.2		18.3		2.9		3.6	
COBALT	10	0.97	J	1.4	J	8.3	J	1.2	J	1.2	J
COPPER	5	3.8	J	2.0	J	11.6		1.3	J	1.4	J
IRON	20	1920		3890		11400		2050		3970	
LEAD	2	1.9	J	2.3	B	19.9	L	1.5	J	2.0	L
MAGNESIUM	1000	142	J	250	J	1980		120	J	136	J
MANGANESE	3	28.8		46.6		364		41.4		37.0	
MERCURY	0.1					0.26					
NICKEL	8	0.95	J	1.9	B	25.0	J	1.2	J	1.3	J
POTASSIUM	1000	57.4	B	62.2	J	781	J	42.3	B	33.3	B
SELENIUM	7		UL		UL		UL		UL		UL
SILVER	2										
SODIUM	1000	55.8	B	52.3	B	86.1	B	41.0	B	25.0	B
THALLIUM	5		UL		UL		UL		UL		UL
VANADIUM	10	2.7	J	4.1	J	17.6		3.1	J	4.9	J
ZINC	12	6.2	J	10.7	J	48.4		16.0		11.5	
CYANIDE	1		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

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DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG : MC01Q7

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :		MC01R3		MC01R4		MC01R8		MC01R9		MC01S0	
Sampling Location :		SST10		SST11		SST15		SST2		SST3	
Field QC:						Field Dup. of MC01S2					
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		06/24/2003		06/24/2003		06/24/2003		06/24/2003		06/24/2003	
Time Sampled :		12:26		13:47		11:40		09:44		10:13	
%Solids :		82.4		81.7		73.8		83.8		81.2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	13900		6600		7050		8090		7260	
ANTIMONY	12		R		R		R		R		R
ARSENIC	3	6.6	L	3.5	L	5.1	L	4.0	L	3.6	L
BARIUM	40	42.3		18.4	J	45.9		24.8	J	31.5	J
BERYLLIUM	1	0.75	J	0.40	J	0.71	J	0.63	J	0.54	J
CADMIUM	1	0.84	J	0.40	J	0.58	J	0.45	J	0.70	J
CALCIUM	1000	536	J	234	J	325	J	216	J	216	J
CHROMIUM	2	27.9		19.1		24.4		14.9		18.0	
COBALT	10	5.6	J	4.4	J	4.3	J	5.1	J	5.3	J
COPPER	5	7.6		4.0	J	8.0		5.7		6.6	
IRON	20	22500		11700		15200		13000		13400	
LEAD	2	9.1	L	7.4	L	8.6	L	4.3	L	8.8	L
MAGNESIUM	1000	1970		705	J	1550		1360		1010	
MANGANESE	3	115		102		83.0		122		121	
MERCURY	0.1	0.061	J			0.071	J				
NICKEL	8	9.8	J	4.3	J	7.2	J	6.4	J	5.6	J
POTASSIUM	1000	594	J	284	J	366	J	529	J	378	J
SELENIUM	7		UL		UL		UL		UL		UL
SILVER	2										
SODIUM	1000	64.4	B	39.8	B	70.4	B	53.6	B	35.6	B
THALLIUM	5		UL		UL		UL		UL		UL
VANADIUM	10	33.9		19.6		28.6		22.4		20.4	
ZINC	12	28.0		11.4		34.5		18.3		56.5	
CYANIDE	1		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

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DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG : MC01Q7

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :		MC01S1		MC01S2		MC01S6		MC01S8		MC01S9		
Sampling Location :		SST4		SST5		SST9		ST10		ST11		
Field QC:				Field Dup. of MC01R8								
Matrix :		Soil		Soil		Soil		Soil		Soil		
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg		
Date Sampled :		06/24/2003		06/24/2003		06/24/2003		06/24/2003		06/24/2003		
Time Sampled :		10:52		11:40		14:20		12:09		13:42		
%Solids :		91.7		86.3		84.2		82.8		81.1		
Dilution Factor :		1.0		1.0		1.0		1.0		1.0		
ANALYTE		CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM		40	1820		9960		7610		14200		18600	
ANTIMONY		12		R		R		R		R		R
ARSENIC		3	2.1	J	5.9	L	4.1	L	5.9	L	7.8	L
BARIUM		40	5.0	J	41.1		49.8		87.0		60.7	
BERYLLIUM		1	0.39	J	0.64	J	0.67	J	0.88	J	0.97	J
CADMIUM		1	0.45	J	0.54	J	0.34	J	0.74	J	0.86	J
CALCIUM		1000	83.6	B	307	J	556	J	662	J	698	J
CHROMIUM		2	15.0		20.6		15.4		22.1		27.3	
COBALT		10	2.5	J	4.3	J	3.6	J	6.4	J	6.8	J
COPPER		5	3.1	J	7.4		5.9		7.0		7.4	
IRON		20	13200		15600		10400		19100		23400	
LEAD		2	2.2	L	7.7	L	5.0	L	11.8	L	12.3	L
MAGNESIUM		1000	163	J	1880		2090		2390		2510	
MANGANESE		3	42.2		64.5		57.2		151		135	
MERCURY		0.1										
NICKEL		8	2.3	J	7.9	J	6.6	J	13.5	J	13.0	J
POTASSIUM		1000	84.4	J	459	J	418	J	507	J	744	J
SELENIUM		7		UL		UL		UL		UL		UL
SILVER		2										
SODIUM		1000	23.4	B	70.1	B	45.8	B	74.9	B	61.6	B
THALLIUM		5		UL		UL		UL		UL		UL
VANADIUM		10	10.8		31.7		22.9		30.3		36.7	
ZINC		12	15.9		24.1		19.9		37.0		36.0	
CYANIDE		1		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

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DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG : MC01Q7

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :	MC01T3			MC01T4		MC01T5		MC01T6		MC01T7	
Sampling Location :	ST15			ST2		ST3		ST4		ST5	
Field QC:	Field Dup. of MC01T7									Field Dup. of MC01T3	
Matrix :	Soil			Soil		Soil		Soil		Soil	
Units :	mg/Kg			mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	06/24/2003			06/24/2003		06/24/2003		06/24/2003		06/24/2003	
Time Sampled :	11:28			09:33		10:05		10:45		11:28	
%Solids :	83.8			85.5		81.6		81.4		83.2	
Dilution Factor :	1.0			1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	15500		11900		19300		15500		14700	
ANTIMONY	12		R	8.1	J		R		R		R
ARSENIC	3	7.4	L	7.6	L	6.9	L	5.8	L	4.1	L
BARIUM	40	165		502		55.2		60.4		318	
BERYLLIUM	1	0.81	J	0.76	J	0.82	J	0.73	J	0.76	J
CADMIUM	1	1.0		120		0.83	J	0.65	J	1.2	
CALCIUM	1000	455	J	582	J	570	J	658	J	559	J
CHROMIUM	2	26.8		37.0		28.8		22.2		23.3	
COBALT	10	5.6	J	10.4		6.1	J	6.2	J	5.7	J
COPPER	5	11.5		102		8.5		6.7		13.3	
IRON	20	21300		22000		21500		18400		16700	
LEAD	2	12.7	L	144	L	10.1	L	10.6	L	17.5	L
MAGNESIUM	1000	2740		7560		2730		2080		2600	
MANGANESE	3	96.9		380		76.4		110		127	
MERCURY	0.1			0.59		0.071	J				
NICKEL	8	10.9	J	75.3	J	12.0	J	10.9	J	9.9	J
POTASSIUM	1000	733	J	470	J	827	J	543	J	720	J
SELENIUM	7		UL		UL		UL		UL		UL
SILVER	2										
SODIUM	1000	89.4	B	89.1	B	84.4	B	50.1	B	123	B
THALLIUM	5		UL		UL		UL		UL		UL
VANADIUM	10	36.9		27.3		37.7		30.0		31.8	
ZINC	12	72.5		7280		51.6		38.2		132	
CYANIDE	1	0.30	J	0.50	J		UL		UL	0.21	J

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

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DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG: MC01W1

Number of Soil Samples: 18

Site:

ELKTON FARM

Number of Water Samples: 0

Lab.:

CEIMIC

Sample Number :		MC01R2		MC01R5		MC01R6		MC01R7		MC01S3	
Sampling Location :		SST1		SST12		SST13		SST14		SST6	
Field QC:											
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		06/25/2003		06/25/2003		06/25/2003		06/25/2003		06/25/2003	
Time Sampled :		13:10		09:40		10:10		11:10		11:32	
%Solids :		90.3		83.3		89.9		90.5		90.6	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	6060		2700		5410		6470		2190	
ANTIMONY	12		R		R		R		R		R
ARSENIC	3	2.8	B	2.9	B	2.3	B	2.1	B	1.7	B
BARIUM	40	16.8	J	11.2	J	35.7	J	54.4		9.8	J
BERYLLIUM	1	0.36	J	0.33	J	0.52	J	0.72	J	0.24	J
CADMIUM	1	0.54	J	0.36	J	0.37	J	0.39	J	0.26	J
CALCIUM	1000	246	J	83.1	B	4760		10500		607	J
CHROMIUM	2	13.2		17.8		15.1		13.8		10.7	
COBALT	10	3.3	J	3.3	J	2.5	J	7.0	J	4.1	J
COPPER	5	2.2	B	3.1	B	4.4	J	5.2		5.4	
IRON	20	14800		9780		9570		10700		5910	
LEAD	2	3.1	J	2.8	J	2.8	J	3.2	J	1.8	B
MAGNESIUM	1000	541	J	294	J	2120		4830		598	J
MANGANESE	3	69.7		80.4		126		522		131	
MERCURY	0.1										
NICKEL	8	3.1	J	2.5	J	4.4	J	23.1		2.3	J
POTASSIUM	1000	172	B	119	B	247	J	279	J	125	B
SELENIUM	7										UL
SILVER	2		UL		UL		UL		UL		UL
SODIUM	1000	65.3	B	21.1	B	104	B	163	B	34.7	B
THALLIUM	5	0.36	B	1.2	B			0.26	B	0.36	B
VANADIUM	10	16.0		12.3		17.8		21.9		9.1	J
ZINC	12	10.6	J	9.8	J	12.3		13.7		8.2	J
CYANIDE	1		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

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DATA SUMMARY FORM: INORGANIC

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Case #: 31878

SDG: MC01W1

Site:

ELKTON FARM

Lab.:

CEIMIC

Sample Number :		MC01S4		MC01S5		MC01S7		MC01T0		MC01T1	
Sampling Location :		SST7		SST8		ST1		ST12		ST13	
Field QC:											
Matrix :		Soil		Soil		Soil		Soil		Soil	
Units :		mg/Kg		mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :		06/25/2003		06/25/2003		06/25/2003		06/25/2003		06/25/2003	
Time Sampled :		11:57		10:40		13:05		09:35		10:05	
%Solids :		84.9		90.2		81.8		80.0		83.2	
Dilution Factor :		1.0		1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	11600		9720		14400		11700		14400	
ANTIMONY	12		R		R		R		R		R
ARSENIC	3	5.2		2.2	B	5.8		5.9		5.9	
BARIUM	40	26.8	J	45.7		85.5		79.1		61.5	
BERYLLIUM	1	0.69	J	0.70	J	0.88	J	0.93	J	0.72	J
CADMIUM	1	0.58	J	0.45	J	0.71	J	1.6		0.63	J
CALCIUM	1000	325	J	6690		695	J	442	J	1110	
CHROMIUM	2	19.1		32.5		20.2		19.5		26.5	
COBALT	10	9.2	J	4.3	J	7.5	J	7.9	J	4.7	J
COPPER	5	6.8		5.4		5.3		9.7		7.5	
IRON	20	16400		13100		18800		22700		17400	
LEAD	2	4.4	J	5.1	J	9.5	J	29.1	J	8.7	J
MAGNESIUM	1000	1760		3260		1840		1480		2550	
MANGANESE	3	175		308		231		486		75.4	
MERCURY	0.1							0.084	J		
NICKEL	8	7.8	J	7.5	J	9.8		11.0		9.5	
POTASSIUM	1000	659	J	444	J	395	J	378	J	545	J
SELENIUM	7		UL		UL		UL		UL		UL
SILVER	2		UL		UL		UL		UL		UL
SODIUM	1000	58.4	B	126	B	60.4	B	29.9	B	60.7	B
THALLIUM	5		UL		UL		UL		UL		UL
VANADIUM	10	25.7		28.5		28.1		23.8		33.0	
ZINC	12	22.0		18.0		29.1		53.4		39.4	
CYANIDE	1		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page __11__ of __12__

Case #: 31878

SDG : MC01W1

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :	MC01T2			MC01T8		MC01T9		MC01W0		MC01W1	
Sampling Location :	ST14			ST6		ST7		ST8		ST9	
Field QC:											
Matrix :	Soil			Soil		Soil		Soil		Soil	
Units :	mg/Kg			mg/Kg		mg/Kg		mg/Kg		mg/Kg	
Date Sampled :	06/25/2003			06/25/2003		06/25/2003		06/25/2003		06/24/2003	
Time Sampled :	11:05			11:27		11:52		10:35		14:15	
%Solids :	81.6			83.3		82.4		92.0		83.9	
Dilution Factor :	1.0			1.0		1.0		1.0		1.0	
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	12700		16900		16400		16400		9690	
ANTIMONY	12		R		R		R		R		R
ARSENIC	3	6.8		6.2		5.1		5.7		2.5	B
BARIUM	40	42.2	J	63.2		58.3		54.4		50.7	
BERYLLIUM	1	0.90	J	0.72	J	0.69	J	0.73	J	0.53	J
CADMIUM	1	0.72	J	0.82	J	0.76	J	0.67	J	0.34	J
CALCIUM	1000	1520		908	J	516	J	3020		870	J
CHROMIUM	2	20.3		28.2		22.6		25.7		19.5	
COBALT	10	5.6	J	6.2	J	8.5	J	5.5	J	3.9	J
COPPER	5	7.1		6.5		5.6		7.3		11.5	
IRON	20	18800		22600		20900		18100		8870	
*LEAD	2	7.1	J	9.3	J	10.3	J	7.6	J	5.6	J
MAGNESIUM	1000	2920		3050		2670		3370		1840	
MANGANESE	3	112		133		158		198		51.9	
MERCURY	0.1										
NICKEL	8	11.8		13.8		11.2		10.8		7.5	J
POTASSIUM	1000	562	J	596	J	534	J	692	J	335	J
SELENIUM	7		UL		UL		UL		UL	1.3	J
SILVER	2		UL		UL		UL		UL		UL
SODIUM	1000	69.3	B	59.9	B	68.6	B	91.1	B	51.5	B
THALLIUM	5		UL		UL		UL		UL	0.48	B
VANADIUM	10	39.8		35.3		32.7		37.2		16.3	
ZINC	12	26.7		66.2		95.9		28.9		24.0	
CYANIDE	1		UL		UL		UL		UL		UL

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

DATA SUMMARY FORM: INORGANIC

Page 12 of 12

Case #: 31878

SDG : MC01W1

Site :

ELKTON FARM

Lab. :

CEIMIC

Sample Number :		MC01X7		MC01X8		MC01Y0					
Sampling Location :		SEDU1		SEDU2		SEDU4					
Field QC:				Field Dup. of MC01Y0		Field Dup. of MC01X8					
Matrix :		Soil		Soil		Soil					
Units :		mg/Kg		mg/Kg		mg/Kg					
Date Sampled :		06/25/2003		06/25/2003		06/25/2003					
Time Sampled :		11:25		10:55		11:00					
%Solids :		67.7		75.9		77.1					
Dilution Factor :		1.0		1.0		1.0					
ANALYTE	CRQL	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
ALUMINUM	40	2250		940		1120					
ANTIMONY	12		R		R		R				
ARSENIC	3	2.4	B	0.94	B	1.8	B				
BARIUM	40	16.7	J	6.3	J	10.4	J				
BERYLLIUM	1	0.18	B	0.054	J	0.15	J				
CADMIUM	1	0.24	J	0.11	B	0.17	B				
CALCIUM	1000	303	J	102	B	126	B				
CHROMIUM	2	6.8		4.4		3.8					
COBALT	10	2.8	J	1.4	J	2.4	J				
COPPER	5	3.6	B	1.7	B	2.3	B				
IRON	20	5210		2000		2950					
LEAD	2	6.3	J	2.2	J	2.7	J				
MAGNESIUM	1000	688	J	259	J	197	J				
MANGANESE	3	79.4		69.2		128					
MERCURY	0.1					0.18					
NICKEL	8	7.6	J	2.9	J	4.3	J				
POTASSIUM	1000	282	B	85.2	J	90.9	J				
SELENIUM	7		UL								
SILVER	2		UL		UL		UL				
SODIUM	1000	164	B	28.3	B	25.0	B				
THALLIUM	5	2.6	B	0.53	B						
VANADIUM	10	6.4	J	2.5	J	2.9	J				
ZINC	12	22.2		7.1	J	9.6	J				
CYANIDE	1		UL		UL		UL				

CRQL = Contract Required Quantitation Limit

SEE NARRATIVE FOR CODE DEFINITIONS

To calculate sample quantitation limits: (CRQL * Dilution Factor) / (%Solids/ 100)

Revised 09/99

APPENDIX C

Chain of Custody (COC) Records



USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 31878
DAS No: R31657

R

Region: 3 Project Code: Account Code: 02T03N50102D037ZLA00 CERCLIS ID: MDD985407196 Spill ID: 037Z Site Name/State: Elkton Farm TMRA/MD Project Leader: Alex Cox Action: Expanded Site Investigation/RI Sampling Co: MDE	Date Shipped: 6/26/2003 Carrier Name: FedEx Airbill: 840878239478 Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	Chain of Custody Record <table border="1"> <tr> <th>Relinquished By</th> <th>(Date / Time)</th> <th>Received By</th> <th>(Date / Time)</th> </tr> <tr><td>1</td><td></td><td></td><td></td></tr> <tr><td>2</td><td></td><td></td><td></td></tr> <tr><td>3</td><td></td><td></td><td></td></tr> <tr><td>4</td><td></td><td></td><td></td></tr> </table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	1				2				3				4				Sampler Signature:
Relinquished By	(Date / Time)	Received By	(Date / Time)																				
1																							
2																							
3																							
4																							

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01M1	Ground Water/ Dixon Wood	L/G	DM (21)	1381 (HNO3), 1382 (HNO3) (2)	DMGWD1	S: 6/26/2003	12:45		MS/MSD
MC01M2	Ground Water/ Dixon Wood	L/G	DM (21)	1383 (HNO3) (1)	DMGWU1	S: 6/26/2003	10:35		-
MC01M3	Ground Water/ Dixon Wood	L/G	DM (21)	1384 (HNO3) (1)	DMGWU2	S: 6/26/2003	10:00		-
MC01M4	Ground Water/ Dixon Wood	L/G	DM (21)	1385 (HNO3) (1)	DMGWU3	S: 6/26/2003	11:10		-
MC01M8	Ground Water/ Chris Hartman	L/G	DM (21)	1389 (HNO3) (1)	DMGWU7	S: 6/26/2003	10:30		-
MC01N1	Ground Water/ Dixon Wood	L/G	CN (21), TM (21)	1392 (HNO3), 1393 (HNO3), 1851 (NaOH), 1852 (NaOH) (4)	GWD1	S: 6/26/2003	12:45	C01N1	MS/MSD
MC01N2	Ground Water/ Dixon Wood	L/G	CN (21), TM (21)	1404 (HNO3), 1853 (NaOH) (2)	GWU1	S: 6/26/2003	10:35	C01N2	-
MC01N3	Ground Water/ Dixon Wood	L/G	CN (21), TM (21)	1409 (HNO3), 1854 (NaOH) (2)	GWU2	S: 6/26/2003	10:00	C01N3	-
MC01N4	Ground Water/ Dixon Wood	L/G	CN (21), TM (21)	1414 (HNO3), 1855 (NaOH) (2)	GWU3	S: 6/26/2003	11:10	C01N4	-
MC01N8	Ground Water/ Chris Hartman	L/G	CN (21), TM (21)	1434 (HNO3), 1859 (NaOH) (2)	GWU7	S: 6/26/2003	10:30	C01N8	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01M1, MC01N1	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, DM = CLP TAL Dissolved Metals+Hg ICP-AES, TM = CLP TAL Total Metals	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-592370820-062603-0001

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

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**USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record**

Case No: 31878

DAS No: R31657

R

Region: 3	Date Shipped: 6/24/2003	Chain of Custody Record		Sampler Signature:
Project Code:	Carrier Name: FedEx	Relinquished By (Date / Time)	Received By (Date / Time)	
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239310	1		
CERCLIS ID: MDD985407186	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2		
Spill ID: 037Z		3		
Site Name/State: Elkton Farm TMRA/MD		4		
Project Leader: Alex Cox				
Action: Expanded Site Investigation/RI				
Sampling Co: MDE				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01P0	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1444 (HNO ₃), 1445 (HNO ₃), 1867 (NaOH), 1868 (NaOH) (4)	SWT1	S: 6/24/2003	11:10	C01P0	MS/MSD
MC01P1	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1460 (HNO ₃), 1869 (NaOH) (2)	SWT2	S: 6/24/2003	10:15	C01P1	-
MC01P2	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1467 (HNO ₃), 1870 (NaOH) (2)	SWT3	S: 6/24/2003	13:10	C01P2	-
MC01P3	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1474 (HNO ₃), 1871 (NaOH) (2)	SWT4	S: 6/24/2003	9:40	C01P3	-
MC01P4	Surface Water/ Phillip Anderson	L/G	CN (21), TM (21)	1481 (HNO ₃), 1872 (NaOH) (2)	SWT5	S: 6/24/2003	10:15	C01P4	-
MC01P5	Surface Water/ Chris Hartman	L/G	CN (21), TM (21)	1488 (HNO ₃), 1873 (NaOH) (2)	SWT6	S: 6/24/2003	9:30	C01P5	Field Blank
MC01Q7	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1539 (Ice Only) (1)	SED1	S: 6/24/2003	11:10	C01Q7	-
MC01Q8	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1545 (Ice Only) (1)	SED2	S: 6/24/2003	10:15	C01Q8	-
MC01Q9	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1551 (Ice Only) (1)	SED3	S: 6/24/2003	13:15	C01Q9	-
MC01R0	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1557 (Ice Only) (1)	SED4	S: 6/24/2003	9:40	C01R0	-
MC01R1	Sediment/ Phillip Anderson	L/G	ICP/AES (21)	1563 (Ice Only) (1)	SED5	S: 6/24/2003	10:15	C01R1	-

*WP. OF SWT2
MC01P1*

*WP. OF SEDT2
MC01Q7*

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01P0, MC01R3	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, ICP/AES = CLP TAL ICP-AES TM+CN, TM = CLP TAL Total Metals	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment load? _____

TR Number: 3-592370820-062403-0003

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**USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record**

Case No: 31878
DAS No: R31657

R

Region: 3 Project Code: Account Code: 02T03N50102D037ZLA00 CERCLIS ID: MDD985407196 Spill ID: 037Z Site Name/State: Elkton Farm TMRA/MD Project Leader: Alex Cox Action: Expanded Site Investigation/RI Sampling Co: MDE	Date Shipped: 6/24/2003 Carrier Name: FedEx Airbill: 840878239310 Shipped to: Ceimic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	Chain of Custody Record <table border="1"><tr><td>Relinquished By</td><td>(Date / Time)</td><td>Received By</td><td>(Date / Time)</td></tr><tr><td>1</td><td></td><td></td><td></td></tr><tr><td>2</td><td></td><td></td><td></td></tr><tr><td>3</td><td></td><td></td><td></td></tr><tr><td>4</td><td></td><td></td><td></td></tr></table>	Relinquished By	(Date / Time)	Received By	(Date / Time)	1				2				3				4				Sampler Signature:
Relinquished By	(Date / Time)	Received By	(Date / Time)																				
1																							
2																							
3																							
4																							

INORGANIC SAMPLE No.	MATRDX SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01R3	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1575 (Ice Only) (1)	SST10	S: 6/24/2003	12:28	C01R3	MS/MSD
MC01R4	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1589 (Ice Only) (1)	SST11	S: 6/24/2003	13:47	C01R4	-
MC01R8	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1613 (Ice Only) (1)	SST15	S: 6/24/2003	11:40	C01R8	-
MC01R9	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1619 (Ice Only) (1)	SST2	S: 6/24/2003	9:44	C01R9	-
MC01S0	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1625 (Ice Only) (1)	SST3	S: 6/24/2003	10:13	C01S0	-
MC01S1	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1631 (Ice Only) (1)	SST4	S: 6/24/2003	10:52	C01S1	-
MC01S2	Subsurface Soil >12"/ Andy Zarins	L/G	ICP/AES (21)	1637 (Ice Only) (1)	SST5	S: 6/24/2003	11:40	C01S2	-
MC01S6	Subsurface Soil >12"/ Barbara Brown	L/G	ICP/AES (21)	1661 (Ice Only) (1)	SST9	S: 6/24/2003	14:20	C01S6	-
MC01S8	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1688 (Ice Only) (1)	ST10	S: 6/24/2003	12:09	C01S8	-
MC01S9	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1694 (Ice Only) (1)	ST11	S: 6/24/2003	13:42	C01S9	-

100% of SST5
MOI S2

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01P0, MC01R3	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, ICP/AES = CLP TAL ICP-AES TM+CN, TM = CLP TAL Total Metals	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-592370820-062403-0003

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**USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record**

Case No: 31878

DAS No: R31657

R

Region: 3	Date Shipped: 6/24/2003	Chain of Custody Record		Sampler Signature:
Project Code:	Carrier Name: FedEx	Relinquished By	(Date / Time)	Received By
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239310			
CERCLIS ID: MDD985407196	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	1		
Spill ID: 037Z		2		
Site Name/State: Elkton Farm TMRA/MD		3		
Project Leader: Alex Cox		4		
Action: Expanded Site Investigation/RI				
Sampling Co: MDE				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01T3	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1718 (Ice Only) (1)	ST15	S: 6/24/2003	11:28	C01T3	DUP. OF ST5 MC01T7
MC01T4	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1724 (Ice Only) (1)	ST2	S: 6/24/2003	9:33	C01T4	-
MC01T5	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1730 (Ice Only) (1)	ST3	S: 6/24/2003	10:05	C01T5	-
MC01T6	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1736 (Ice Only) (1)	ST4	S: 6/24/2003	10:45	C01T6	-
MC01T7	Surface Soil (0"-12")/ Andy Zarins	L/G	ICP/AES (21)	1742 (Ice Only) (1)	ST5	S: 6/24/2003	11:28	C01T7	-
MC01W1	Surface Soil (0"-12")/ Barbara Brown	L/G	ICP/AES (21)	1766 (Ice Only) (1)	ST9	S: 6/24/2003	14:15	C01W1	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01P0, MC01R3	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, ICP/AES = CLP TAL ICP-AES TM+CN, TM = CLP TAL Total Metals	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-592370820-062403-0003

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31878

DAS No: R31657

R

Region: 3	Date Shipped: 6/25/2003	Chain of Custody Record		Sampler Signature:
Project Code:	Carrier Name: FedEx	Relinquished By	(Date / Time)	Received By
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239490			
CERCLIS ID: MDD985407196	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	1		
Spill ID: 037Z		2		
Site Name/State: Elkton Farm TMRA/MD		3		
Project Leader: Alex Cox		4		
Action: Expanded Site Investigation/RI				
Sampling Co: MDE				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01M1	Ground Water	L/G	DM (21)	1381 (HNO3), 1382 (HNO3) (2)	DMGWD1				MS/MSD
MC01P6	Surface Water/ Chris Hartman	L/G	CN (21), TM (21)	1495 (HNO3), 1874 (NaOH) (2)	SWT7	S: 6/25/2003	9:00	C01P6	Field Blank
MC01P9	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1506 (HNO3), 1861 (NaOH) (2)	SWU1	S: 6/25/2003	11:20	C01P9	-
MC01Q0	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1511 (HNO3), 1862 (NaOH) (2)	SWU2	S: 6/25/2003	10:45	C01Q0	-
MC01Q2	Surface Water/ Dixon Wood	L/G	CN (21), TM (21)	1521 (HNO3), 1864 (NaOH) (2)	SWU4	S: 6/25/2003	10:50	C01Q2	-
MC01R2	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1569 (Ice Only) (1)	SST1	S: 6/25/2003	13:10	C01R2	-
MC01R5	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1595 (Ice Only) (1)	SST12	S: 6/25/2003	9:40	C01R5	-
MC01R6	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1601 (Ice Only) (1)	SST13	S: 6/25/2003	10:10	C01R6	-
MC01R7	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1607 (Ice Only) (1)	SST14	S: 6/25/2003	11:10	C01R7	-
MC01S3	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1643 (Ice Only) (1)	SST6	S: 6/25/2003	11:32	C01S3	-

DU
8/17/03
Dup. of SWU2
MC01Q0

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01M1, MC01S7	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, DM = CLP TAL Dissolved Metals+Hg ICP-AES, ICP/AES = CLP TAL ICP-AES TM+CN, TM = CLP TAL Total Metals	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment load? _____

TR Number: 3-592370820-062503-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

REGION COPY



USEPA Contract Laboratory Program Inorganic Traffic Report & Chain of Custody Record

Case No: 31878

DAS No: R31657

R

Region: 3	Date Shipped: 6/25/2003	Chain of Custody Record		Sampler Signature:
Project Code:	Carrier Name: FedEx	Relinquished By	(Date / Time)	Received By (Date / Time)
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239490	1		
CERCLIS ID: MDD985407198	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900	2		
Spill ID: 037Z		3		
Site Name/State: Elkton Farm TMRA/MD		4		
Project Leader: Alex Cox				
Action: Expanded Site Investigation/RI				
Sampling Co: MDE				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01S4	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1649 (Ice Only) (1)	SST7	S: 6/25/2003	11:57	C01S4	-
MC01S5	Subsurface Soil (>12")/ Andy Zarins	L/G	ICP/AES (21)	1655 (Ice Only) (1)	SST8	S: 6/25/2003	10:40	C01S5	-
MC01S7	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1674 (Ice Only) (1)	ST1	S: 6/25/2003	13:05	C01S7	MS/MSD
MC01T0	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1700 (Ice Only) (1)	ST12	S: 6/25/2003	9:35	C01T0	-
MC01T1	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1706 (Ice Only) (1)	ST13	S: 6/25/2003	10:05	C01T1	-
MC01T2	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1712 (Ice Only) (1)	ST14	S: 6/25/2003	11:05	C01T2	-
MC01T8	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1748 (Ice Only) (1)	ST6	S: 6/25/2003	11:27	C01T8	-
MC01T9	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1754 (Ice Only) (1)	ST7	S: 6/25/2003	11:52	C01T9	-
MC01W0	Surface Soil (0"-12")/ Scott Morgan	L/G	ICP/AES (21)	1760 (Ice Only) (1)	ST8	S: 6/25/2003	10:35	C01W0	-
MC01X7	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1802 (Ice Only) (1)	SEDU1	S: 6/25/2003	11:25	C01X7	-

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01M1, MC01S7	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key:	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____
CN = Cyanide, DM = CLP TAL Dissolved Metals+Hg ICP-AES, ICP/AES = CLP TAL ICP-AES TM+CN, TM = CLP TAL Total Metals			

TR Number: 3-592370820-062503-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

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USEPA Contract Laboratory Program
Inorganic Traffic Report & Chain of Custody Record

Case No: 31878

DAS No: R31657

R

Region: 3	Date Shipped: 6/25/2003	Chain of Custody Record	Sampler Signature:	
Project Code:	Carrier Name: FedEx		Relinquished By (Date / Time)	Received By (Date / Time)
Account Code: 02T03N50102D037ZLA00	Airbill: 840878239490		1	
CERCLIS ID: MDD985407196	Shipped to: Celmic Corporation 10 Dean Knauss Drive Narragansett RI 02882 (401) 782-8900		2	
Spill ID: 037Z			3	
Site Name/State: Elkton Farm TMRA/MD		4		
Project Leader: Alex Cox				
Action: Expanded Site Investigation/RI				
Sampling Co: MDE				

INORGANIC SAMPLE No.	MATRIX/ SAMPLER	CONC/ TYPE	ANALYSIS/ TURNAROUND	TAG No./ PRESERVATIVE/ Bottles	STATION LOCATION	SAMPLE COLLECT DATE/TIME		ORGANIC SAMPLE No.	QC Type
MC01X8	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1806 (Ice Only) (1)	SEDU2	S: 6/25/2003	10:55	C01X8	-
MC01Y0	Sediment/ Dixon Wood	L/G	ICP/AES (21)	1814 (Ice Only) (1)	SEDU4	S: 6/25/2003	11:00	C01Y0	

*dup. of SEDU2
MC01X8*

Shipment for Case Complete? N	Sample(s) to be used for laboratory QC: MC01M1, MC01S7	Additional Sampler Signature(s):	Chain of Custody Seal Number:
Analysis Key: CN = Cyanide, DM = CLP TAL Dissolved Metals+Hg ICP-AES, ICP/AES = CLP TAL ICP-AES TM+CN, TM = CLP TAL Total Metals	Concentration: L = Low, M = Low/Medium, H = High	Type/Designate: Composite = C, Grab = G	Shipment Iced? _____

TR Number: 3-592370820-062503-0002

PR provides preliminary results. Requests for preliminary results will increase analytical costs.

Send Copy to: Sample Management Office, 2000 Edmund Halley Dr., Reston, VA. 20191-3400 Phone 703/264-9348 Fax 703/264-9222

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U.S. EPA Region III Sample Scheduling Request Form

RAS CASE No: CT1854 / 31870		DAS No:		NSF No:	
Date: 6/18/03		Data Validation Level: M3, IM2		EPA Lab Reply:	
Site Name: Elkton Farm				QAPP/SAP Info :	
Address: 183 Zeitler Road			City: Elkton		State: Maryland
Latitude:		Longitude:		Anal +Val Data TAT: 45 DAYS	
Program: CERCLA		CERCLIS No: MDD985407196		Activity: SI	
Account No: 03T03N50102D037ZLA00		Operable Unit:		Spill ID:	
Preparer: Chris Hartman		RPM/PO: Lorie Baker		Site Leader: Alex Cox	
Phone: 410-537-3453		Phone: 215-814-3355		Phone: 410-537-3493	
FAX: 410-537-3472		FAX:		FAX: 410-537-3472	
E-mail: chartman@mde.state.md.us		E-mail:		E-mail: acox@mde.state.md.us	
EPA CO:		Contract Type:		Prime: MDE	Sub:
Lab Assignment Date:		Analytical TAT: 21 Days		Ship Date From: 6/23/03	
Organic Lab:				Ship Date To: 6/27/03	
Inorganic Lab:				Carrier:	

SAMPLES	METHOD	PARAMETER	MATRIX
23	OLM04.3	TCL	AQ
4	OLM04.3	VOC	AQ
23	ILM05.2	ICP-AES TM+CN+HG	AQ
9	ILM05.2	ICP-AES TAL (DM)	AQ
55	OLM04.3	TCL	SOLID
55	ILM05.2	ICP-AES TM+CN+HG	SOLID

Notes:

1. Quantitation Limits and Quality Control requirements other than those specified in the method or SOW must be included on separate sheet.
2. QC filed samples must be included as part of the total number of samples.
3. Data validation levels M3 and IM2 require justification.

Special Instructions: ENCORES - 24 SOLIDS SAMPLES. PLEASE SEND THE ELECTRONIC DATA ASAP.



Lisa Penix

08/15/2003 08:51 AM

To: Ken Curry/ESC/R3/USEPA/US@EPA

cc:

Subject: Re: 31878 - Elkton Farm

Lisa D. Penix
ESAT RSCC
Lockheed Martin Environmental Services
EPA Environmental Science Center
701 Mapes Road
Fort Meade, MD 20755
Telephone (410) 305 - 3020
Telefax (410) 305 - 3095
email: Penix.Lisa@epamail.epa.gov

----- Forwarded by Lisa Penix/ESC/R3/USEPA/US on 08/15/2003 09:03 AM -----



Chris Hartman
<CHartman@mde.state.md.us>

08/15/2003 09:02 AM

To: Lisa Penix/ESC/R3/USEPA/US@EPA

cc: Alex Cox <mcox@mde.state.md.us>

Subject: Re: 31878 - Elkton Farm

Yes, MC01N8 (C01N8) was a field blank. Additionally, MC01M8 was also a field blank and Sample C01N7 was a trip blank.

Chris Hartman, Geologist
Maryland Department of the Environment
Environmental Restoration and Redevelopment Program
Site and Brownfields Assessment Team

>>> <Penix.Lisa@epamail.epa.gov> 08/15/03 07:48AM >>>
Hi Chris,

The validator had a quick question. Is sample MC01N8 a field blank?
Please let me know and I will pass that on to the validator.

THANKS!

Lisa D. Penix
ESAT RSCC
Lockheed Martin Environmental Services
EPA Environmental Science Center
701 Mapes Road
Fort Meade, MD 20755
Telephone (410) 305 - 3020
Telefax (410) 305 - 3095
email: Penix.Lisa@epamail.epa.gov

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<<<<GWIASIG 0.07>>>>

APPENDIX D

Laboratory Case Narrative

USEPA-CLP

COVER PAGE

Lab Name: Ceimic Corporation Contract: 68-W-02-063
 Lab Code: CEIMIC Case No: 31878 NRAS No.: SDG No: MC01P0
 SOW No.: ILM05.2

EPA Sample No.	Lab Sample ID
MC01M1	030792-11
MC01M1D	030792-11D
MC01M1S	030792-11S
MC01M2	030792-12
MC01M3	030792-13
MC01M4	030792-14
MC01M8	030792-15
MC01N1	030792-16
MC01N2	030792-17
MC01N3	030792-18
MC01N4	030792-19
MC01N8	030792-20
MC01P0	030792-01
MC01P0D	030792-01D
MC01P0S	030792-01S
MC01P1	030792-02
MC01P2	030792-03
MC01P3	030792-04
MC01P4	030792-05
MC01P5	030792-06

	(Yes/No)	ICP-AES	ICP-MS
Were ICP-AES and ICP-MS interelement corrections applied?		YES	NO
Were ICP-AES and ICP-MS background corrections applied?		YES	NO
If yes, were raw data generated before application of background corrections?		NO	NO

Comments: _____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Ryan C. Montalbano

Name: Ryan Montalbano

Date: 7/14/83

Title: Inorganic Laboratory Supervisor

USEPA-CLP

COVER PAGE

Lab Name: Ceimic Corporation Contract: 68-W-02-063
Lab Code: CEIMIC Case No: 31878 NRAS No.: SDG No: MC01P0
SOW No.: ILM05.2

EPA Sample No.

Lab Sample ID

MC01P6030792-07MC01P9030792-08MC01Q0030792-09MC01Q2030792-10

Were ICP-AES and ICP-MS interelement corrections applied?

(Yes/No)

ICP-AES

ICP-MS

YES

NO

Were ICP-AES and ICP-MS background corrections applied?

(Yes/No)

YES

NO

If yes, were raw data generated before application of background corrections?

(Yes/No)

NO

NO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:

Ryan C. Montalbano

Name:

Ryan Montalbano

Date:

7/14/03

Title:

Inorganic Laboratory Supervisor

SDG Narrative

Laboratory Name: Ceimic Corporation

Case No.: 31878

SDG No.: MC01P0

Contract: 68W02063

Ceimic Project No.: 030792

The following ILM05.2 (ICP-AES) twenty aqueous samples were received at Ceimic Corporation on June 25, 26, and 27, 2003:

<u>EPA ID</u>	<u>Ceimic ID</u>
MC01M1	030792-11
MC01M2	030792-12
MC01M3	030792-13
MC01M4	030792-14
MC01M8	030792-15
MC01N1	030792-16
MC01N2	030792-17
MC01N3	030792-18
MC01N4	030792-19
MC01N8	030792-20
MC01P0	030792-01
MC01P1	030792-02
MC01P2	030792-03
MC01P3	030792-04
MC01P4	030792-05
MC01P5	030792-06
MC01P6	030792-07
MC01P9	030792-08
MC01Q0	030792-09
MC01Q2	030792-10

Comments on Data Package

The samples for case 31878 were received for ICP-AES, mercury, and cyanide analysis. Of these, samples MC0M1, MC0M2, MC0M3, MC0M4, and MC0M5 were instead sent for dissolved metals (by ICP-AES) and dissolved mercury analysis. The samples arrived after being filtered and preserved by the samplers, as there was no indication otherwise on the Traffic Reports / Chains of Custody.

The above samples were digested and analyzed in accordance with the Inorganic Statement of Work (SOW) ILM05.2.

QA/QC Samples:

Matrix spike and duplicate analysis, as well as serial dilution, were performed on samples MC01P0 for total metals, total mercury, and cyanide, and MC01M1 for dissolved metals and dissolved mercury. Post-digestion spikes were not required.

The TR/COCs also specified an additional QC analysis on sample MC01N1; this was cancelled after consultation with Holly Sturdavant of the Sample Management Office.

Observations:

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). If analytes are detected between the Contract Required Detection Limits (CRDL) and the MDL, a "J" flag is shown in the C column on the Form I-IN.

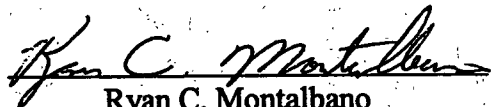
"*", "N", and "E" qualifiers do not apply to this SDG.

Deviations from Contract:

None.

End of Case Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Ryan C. Montalbano
Supervisor, Inorganic Laboratories

07/14/03

Date

USEPA - CLP

COVER PAGE

Lab Name: Ceimic Laboratories Contract: 68-W-02-063
Lab Code: CEIMIC Case No: 31878 NRAS No.: 31442 SDG No: MC01Q7
SOW No.: ILM05.2

EPA Sample No.

Lab Sample ID

MC01Q7	030793-01
MC01Q8	030793-02
MC01Q9	030793-03
MC01R0	030793-04
MC01R1	030793-05
MC01R3	030793-06
MC01R3D	030793-06D
MC01R3S	030793-06S
MC01R4	030793-07
MC01R8	030793-08
MC01R9	030793-09
MC01S0	030793-10
MC01S1	030793-11
MC01S2	030793-12
MC01S6	030793-13
MC01S8	030793-14
MC01S9	030793-15
MC01T3	030793-16
MC01T4	030793-17
MC01T5	030793-18

ICP-AES ICP-MS

Were ICP-AES and ICP-MS interelement corrections applied?

(Yes/No)

YESNO

Were ICP-AES and ICP-MS background corrections applied?

(Yes/No)

YESNO

If yes, were raw data generated before application of background corrections?

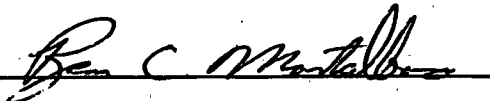
(Yes/No)

NONO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature:



Name:

Ryan Montalbano

Date:

8/6/03

Title:

Inorganic Laboratory Supervisor

USEPA - CLP

COVER PAGE

Lab Name: Ceimic Laboratories Contract: 68-W-02-063
Lab Code: CEIMIC Case No: 31878 NRAS No.: 31442 SDG No: MC01Q7
SOW No.: ILM05.2

EPA Sample No.

Lab Sample ID

MC01T6030793-19MC01T7030793-20

Were ICP-AES and ICP-MS interelement corrections applied?

(Yes/No)

ICP-AES

ICP-MS

YESNO

Were ICP-AES and ICP-MS background corrections applied?

(Yes/No)

YESNO

If yes, were raw data generated before application of background corrections?

(Yes/No)

NONO

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: *Ryan C. Montalbano*Name: Ryan MontalbanoDate: 8/6/03Title: Inorganic Laboratory Supervisor

SDG Narrative

Laboratory Name: Ceimic Corporation

Case No.: 31878

SDG No.: MC01Q7

Contract: 68W02063

Ceimic Project No.: 030793

The following ILM05.2 (ICP-AES) twenty sediment samples were received at Ceimic Corporation on June 25 and 30, 2003:

<u>EPA ID</u>	<u>Ceimic ID</u>
MC01Q7	030793-01
MC01Q8	030793-02
MC01Q9	030793-03
MC01R0	030793-04
MC01R1	030793-05
MC01R3	030793-06
MC01R3D	030793-06D
MC01R3S	030793-06S
MC01R4	030793-07
MC01R8	030793-08
MC01R9	030793-09
MC01S0	030793-10
MC01S1	030793-11
MC01S2	030793-12
MC01S6	030793-13
MC01S8	030793-14
MC01S9	030793-15
MC01T3	030793-16
MC01T4	030793-17
MC01T5	030793-18
MC01T6	030793-19
MC01T7	030793-20

Comments on Data Package

The samples for case 31878 were received for ICP-AES, mercury, and cyanide analysis. The above samples were digested/distilled and analyzed in accordance with the Inorganic Statement of Work (SOW) ILM05.2.

Sample MC01Q8, which is listed on the Traffic Reports / Chains of Custody as arriving at CEIMIC on June 25, arrived in a separate shipment without a TR/COC on June 30. This information was relayed to Holly Sturdavant of the Sample Management Office on July 1.

QA/QC Samples:

Matrix spike and duplicate analysis, as well as serial dilution, were performed on samples MC01R3. A post-digestion spike was required for antimony, arsenic, lead, selenium, and thallium. A post-distillation spike was required for cyanide.

Observations:

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). If analytes are detected between the Contract Required Detection Limits (CRDL) and the MDL, a "J" flag is shown in the C column on the Form I-IN.


The "N" qualifier applies to Sb, As, Pb, Se, Tl, and CN. The "E" qualifier applies to Ni.

Deviations from Contract:

None.

End of SDG Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.



Ryan C. Montalbano
Supervisor, Inorganic Laboratories

08/06/03

Date

USEPA-CLP

COVER PAGE

Lab Name: Ceimic Corporation Contract: 68-W-02-063
Lab Code: CEIMIC Case No: 31878 NRAS No.: SDG No: MC01W1
SOW No.: ILM05.2

EPA Sample No.	Lab Sample ID
MC01R2	030794-02
MC01R5	030794-03
MC01R6	030794-04
MC01R7	030794-05
MC01S3	030794-06
MC01S4	030794-07
MC01S5	030794-08
MC01S7	030794-09
MC01S7D	030794-09D
MC01S7S	030794-09S
MC01T0	030794-10
MC01T1	030794-11
MC01T2	030794-12
MC01T8	030794-13
MC01T9	030794-14
MC01W0	030794-15
MC01W1	030794-01
MC01X7	030794-16
MC01X8	030794-17
MC01Y0	030794-18

		ICP-AES	ICP-MS
Were ICP-AES and ICP-MS interelement corrections applied?	(Yes/No)	<u>YES</u>	<u>NO</u>
Were ICP-AES and ICP-MS background corrections applied?	(Yes/No)	<u>YES</u>	<u>NO</u>
If yes, were raw data generated before application of background corrections?	(Yes/No)	<u>NO</u>	<u>NO</u>

Comments: _____

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette (or via an alternate means of electronic transmission, if approved in advance by USEPA) has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: *Ryan C. Montalbano* Name: Ryan Montalbano
Date: 6/25/03 Title: Inorganic Laboratory Supervisor

SDG Narrative

Laboratory Name: Ceimic Corporation

Case No.: 31878

SDG No.: MC01W1

Contract: 68W02063

Ceimic Project No.: 030794

The following ILM05.2 (ICP-AES) eighteen soil samples were received at Ceimic Corporation on June 25 and 26, 2003:

<u>EPA ID</u>	<u>Ceimic ID</u>
MC01R2	030794-02
MC01R5	030794-03
MC01R6	030794-04
MC01R7	030794-05
MC01S3	030794-06
MC01S4	030794-07
MC01S5	030794-08
MC01S7	030794-09
MC01T0	030794-10
MC01T1	030794-11
MC01T2	030794-12
MC01T8	030794-13
MC01T9	030794-14
MC01W0	030794-15
MC01W1	030794-01
MC01X7	030794-16
MC01X8	030794-17
MC01Y0	030794-18

Comments on Data Package

The samples for case 31878 were received for ICP-AES, Mercury, and Cyanide analyses. The above samples were digested/distilled and analyzed in accordance with the Inorganic Statement of Work (SOW) ILM05.2.

QA/QC Samples:

Matrix spike and duplicate analysis, as well as serial dilution, were performed on sample MC01S7. A post-digestion spike was required for antimony and lead.

Observations:

A "U" flag in the C column on the sample result forms (Form I-IN) indicates that the concentration of that analyte in the sample is undetected at the method detection limit (MDL). If analytes are detected between the Contract Required Detection Limits (CRDL) and the MDL, a "J" flag is shown in the C column on the Form I-IN.

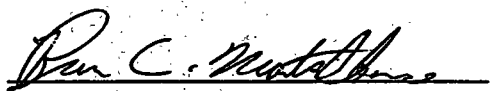
The "*" qualifier applies to lead. The "N" qualifier applies to antimony and lead. The "E" qualifier applies to cobalt, lead, and potassium.

Deviations from Contract:

Iron is detected in the preparation blank at a concentration of 27.5 mg/kg. All samples in this SDG have a concentration greater than ten times this amount.

End of SDG Narrative.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or his designee, as verified by the following signature.


Ryan C. Montalbano
Supervisor, Inorganic Laboratories

07/25/03
Date